NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		REPORT FOR: MONTH: **January** YEAR: **2011**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE **Alan E. Gerard, Meteorologist In-Charge** DATE **02/17/2011**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

The month of January was characterized by cooler than normal temperatures and mostly below normal rainfall across the Hydrologic Service Area (HSA). The only exception was in East Carroll and Madison Parishes in Louisiana and Issaquena and Sharkey Counties in Mississippi where rainfall was above normal.

The month began with a severe weather producing cold front moving across Mississippi. Several tornadoes touched down after midnight in the north and northeast portions of the HSA. Heavy rainfall accompanied the front as it moved across the area. Rainfall amounts for the previous 24 hours ending at 7am on the 1st ranged from 2.00 to 5.00 inches from Humphreys County to Webster County with 1.00 to 3.00 inches occurring over much of the remainder of the HSA.

High pressure moved into the region from the 2nd through the 3rd. A front crossed the area on the 4th stalling along the Mississippi Coast on the 5th. Rainfall from 0.50 to 1.50 inches fell across South Mississippi with the remainder of the area receiving 0.50 inches or less. High pressure moved into the region through the 7th.

The jet stream plunged south on the 8th and 9th. This southern dip, aided by a low pressure system over the Great Lakes, helped to funnel a cold Arctic airmass across Mississippi behind yet another cold front. A low pressure system formed off the Southeast Texas Coast on the 9th and moved across the northern Gulf of Mexico through the 10th. This system produced from 1.00 to 5.00 inches of snow across the northern counties in our HSA and a mix of freezing rainfall, sleet, and some snow across the I-20 corridor. Mainly freezing rainfall occurred during the evening of the 9th into the early hours of the 10th across southern portions of the HSA. Liquid precipitation amounts were generally less than 0.50 inches. High pressure built into the area on the 10th and remained in control of the weather through the 15th.

From the 16th to the 17th, a shortwave trough moved into the area from the west creating some isentropic lift ahead of it. Moderate rainfall broke out

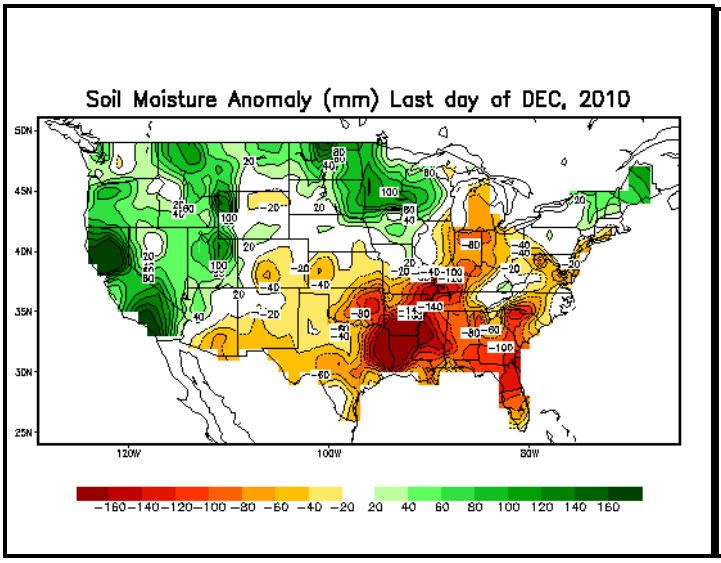
over Northeast Louisiana and portions of West Mississippi. Rainfall totals ranged from 0.50 to 1.50 inches over this area. Much lighter amounts occurred over Central and North Mississippi. A stationary front settled along the Mississippi Coast by the afternoon of the 17th. On the 18th, a cold front rapidly moved across the area bringing cooler and drier air to the region. Rainfall amounts were generally less than 0.25 inches across central and northern portions of the HSA. The heaviest rainfall occurred in Southeast Mississippi, 0.50 to 1.50 inches. Another fast moving upper level trough pushed across the area on the 20th bringing 0.50 inches or less to the HSA. High pressure built into the area on the 21st and 22nd.

By the 23rd, warm, moist air began moving back into the region. A cold front moved into the HSA on the 24th. A low pressure center formed on the front along the Southeast Texas Coast. The low tracked across southern portions of Mississippi on the 25th. The heaviest rainfall occurred from Northeast Louisiana to portions of our northeast HSA in Lowndes County Mississippi. Rainfall totals ranged from 1.00 to 2.50 inches across this area. The remainder of the HSA had from the 0.50 to 1.50 inches. High pressure moved in on the 26th. A weak frontal system skirted the Louisiana and Arkansas border and then moved into West Tennessee on the 27th producing little or no rainfall. High pressure controlled the HSA through the 29th. By the morning of the 30th, a southerly flow brought warm, moist air back into the area. An upper level trough pushed through the HSA from the 30th into the morning of the 31st. Moderate to light rainfall broke out south of Highway 82. The heaviest rainfall from 0.50 to 2.50 inches occurred south of Highway 82 southward to the I-20 corridor. Rainfall ranged from 0.25 to 1.00 inch south of I-20. Warm, moist air continued pouring north into the area on the afternoon of the 31st ahead of a developing storm system.

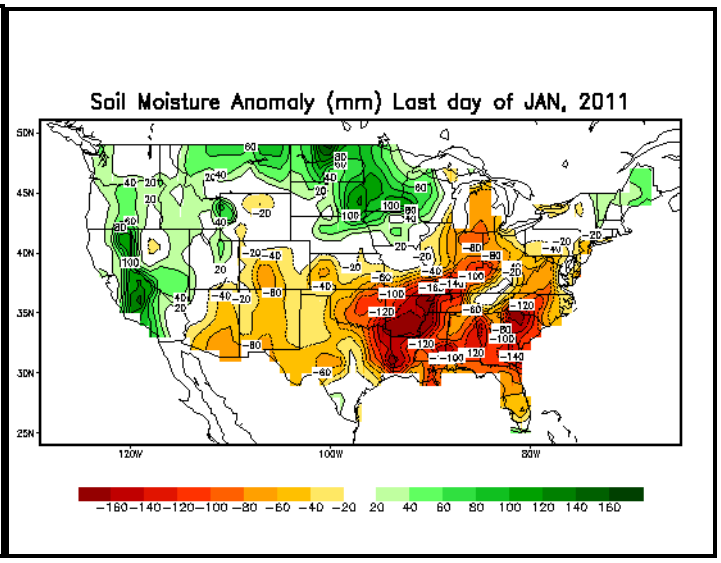
River and Soil Conditions...

The driest region in the HSA was from Southeast Arkansas into northern Washington and Bolivar Counties of Mississippi eastward to Grenada County. Rainfall amounts ranged between 10 to 50 percent of normal. The only locations with above normal rainfall were in East Carroll and Madison Parishes in Louisiana and Issaquena and Sharkey Counties in Mississippi.

Soil moisture deficits ranged from 5.00 to 6.00 inches across Southeast Arkansas and into the Middle Yazoo Delta Region. Northeast Louisiana had 4.00 to 5.00 inch deficits while the remaining areas in Mississippi had 3.00 to 4.00 inch soil moisture deficits.



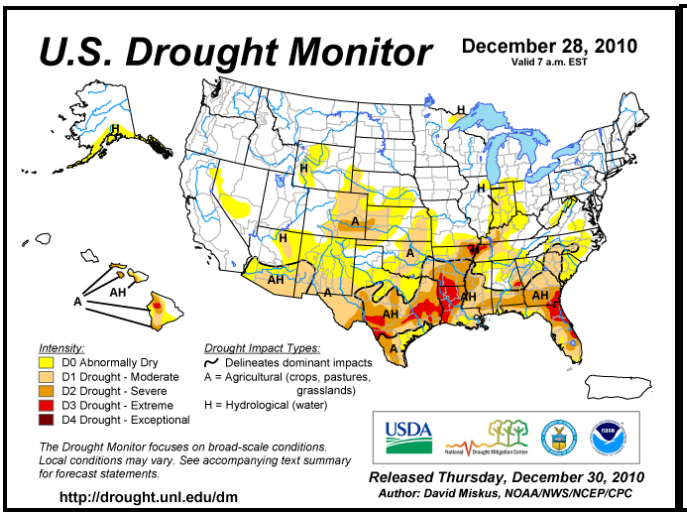
Last day of December, 2010



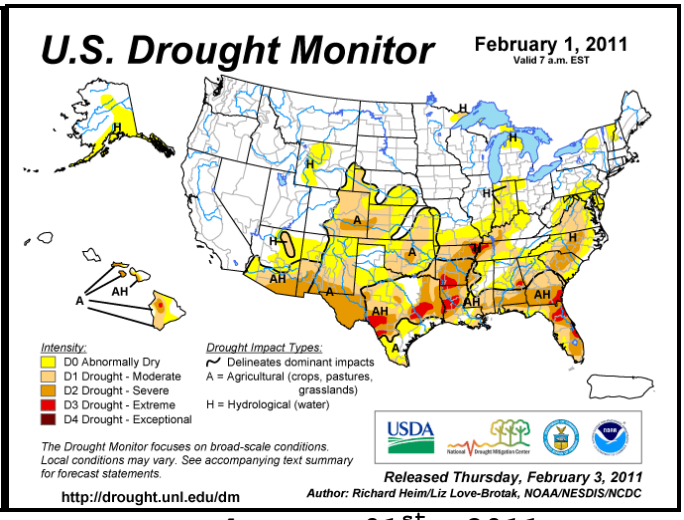
Last day of January 2011

Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

A comparison of the December 28th U.S. Drought Monitor to the February 1st U.S. Drought Monitor showed drought conditions improving over Northeast Louisiana and Central Mississippi. Severe Drought (D2) continued over Southeast Arkansas and the northwest portions of Mississippi in the WFO Jackson HSA and portions of Southeast Mississippi. Moderate Drought (D1) was across Northeast Louisiana and much of South Mississippi. A small area of Abnormally Dry (D0) was in North Central Mississippi. Drought conditions no longer exist from Jackson Metro to the Starkville, Columbus area.

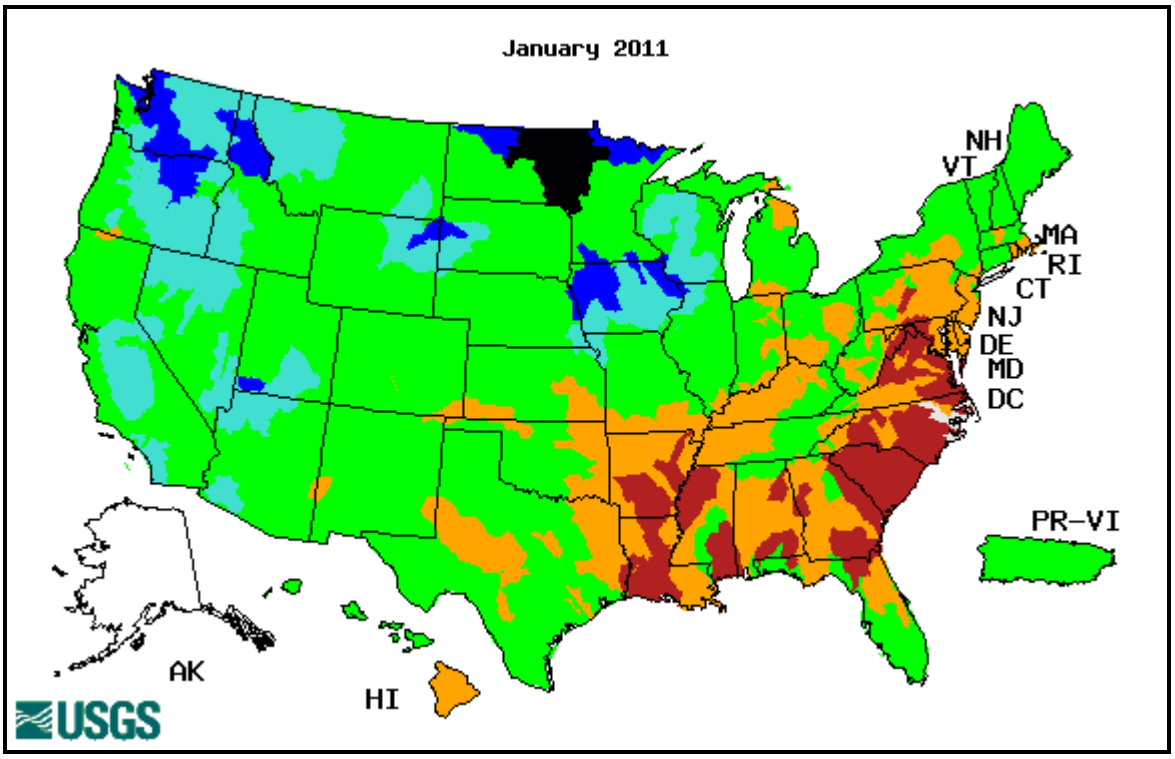


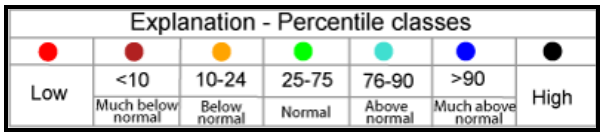
December 28, 2010



February 01st, 2011

The United States Geological Survey's (USGS) January 2011 river streamflow records were compared with all historical January streamflow records. Stream flows ranged from below normal to much below normal over all but the Pearl River Basin where streamflow was near normal.





The Upper Big Black River and Tuscolameta Creek experienced minor flooding during the first few days of the month. Minor to moderate rises occurred along the Pearl River and the Big Black River Systems. Little change with a few minor rises occurred along the remaining rivers.

The Mississippi River had a minor rise around the middle of the month before receding back to early month river stages.

Based on current soil moisture conditions, current streamflow conditions, and an expected normal rainfall pattern in the north and below normal rainfall pattern in the south over the next 60 to 90 days:

Pearl River System:	Below Normal.
Yazoo River System:	Below Normal.
Big Black River System:	Below Normal.
Homochitto River System:	Below Normal.
Pascagoula River System:	Below Normal.

***Northeast LA and Southeast AR*: Below Normal.**
***Tombigbee River System*: Below Normal.**
***Mississippi River:* Normal.**

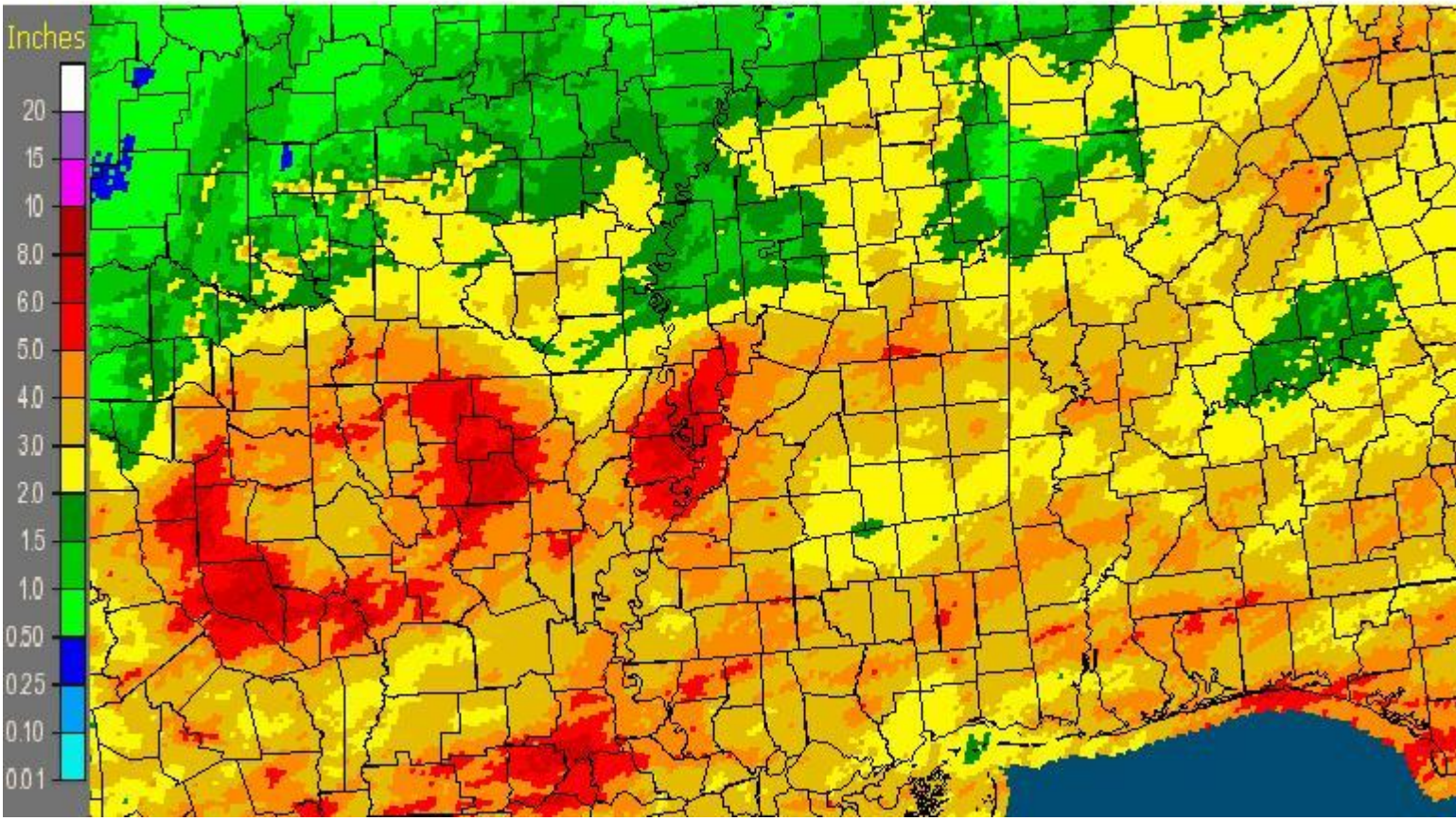
Rainfall for the month of January

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on December 31st until 7 am on January 31st were: 8.73 inches at St Joseph, LA; 8.52 inches at Yazoo City, MS; 8.27 inches at Belzoni,MS; MS; 8.03 inches at Rayville, LA; 8.02 inches at Vicksburg, MS; 7.72 inches at Philadelphia, MS; 7.59 inches at Lake Providence, LA; 7.40 inches at Brandon 6ENE; and 7.25 inches at Vaiden, MS

The lowest rainfall totals in the HSA were: 2.34 inches at Leland, MS; 2.46 inches at Cleveland and Greenville, MS; 2.54 inches at Columbia, 2.55 inches at Portland, AR; 2.77 inches at Laurel, MS; and 2.90 inches at Dermott, AR

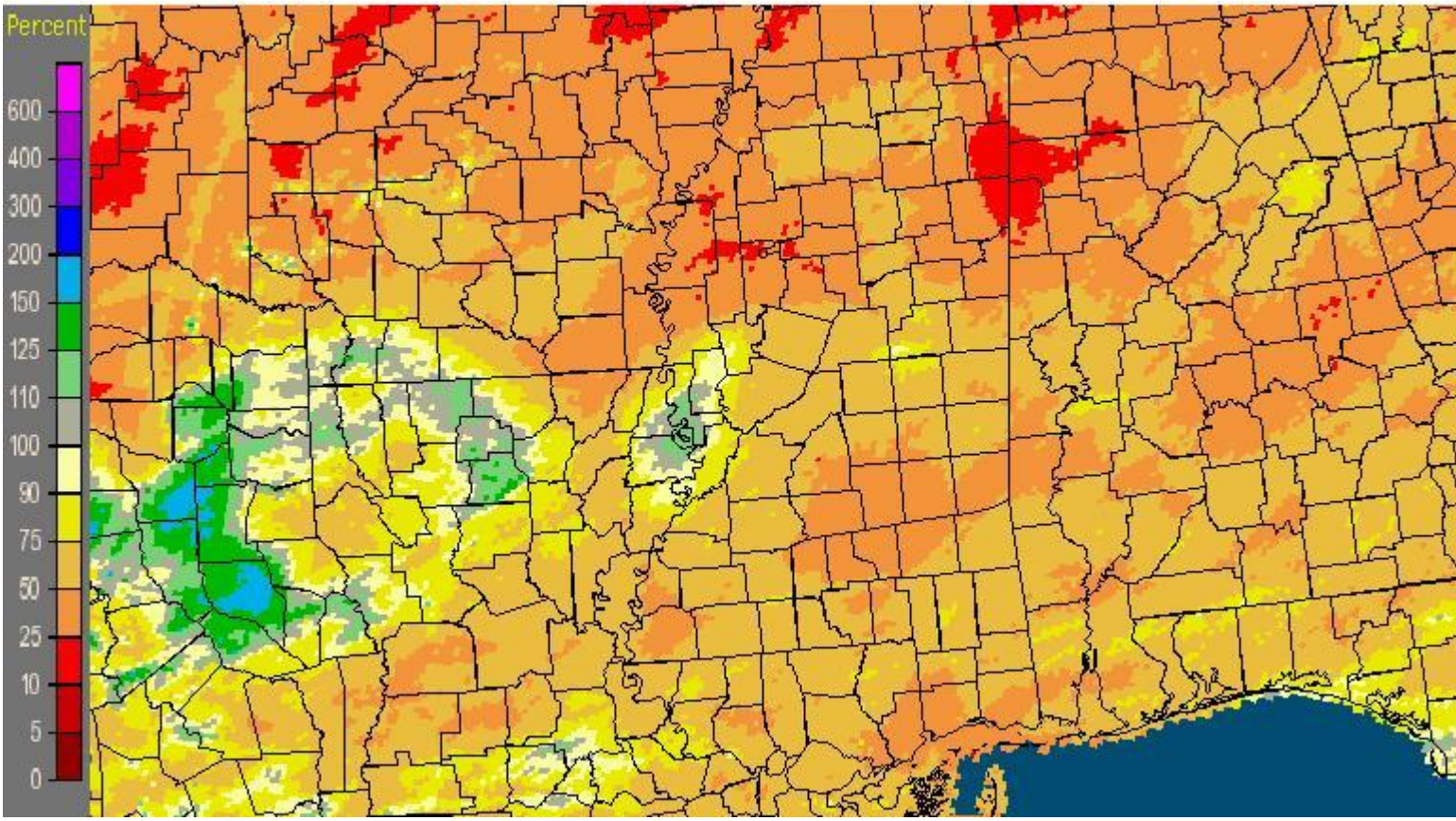
Note: The Cooperative Observer sites above are higher than the graphics below since they include heavy rainfall that occurred from 7am on December 31st to January 1st.

Mississippi: January, 2011 Monthly Observed Precipitation
Valid at 2/1/2011 1200 UTC- Created 2/5/11 20:35 UTC



January 2011 Rainfall Estimates

Mississippi: January, 2011 Monthly Percent of Normal Precipitation
Valid at 2/1/2011 1200 UTC- Created 2/5/11 20:39 UTC



2011 January Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

January rainfall for Selected Cities...

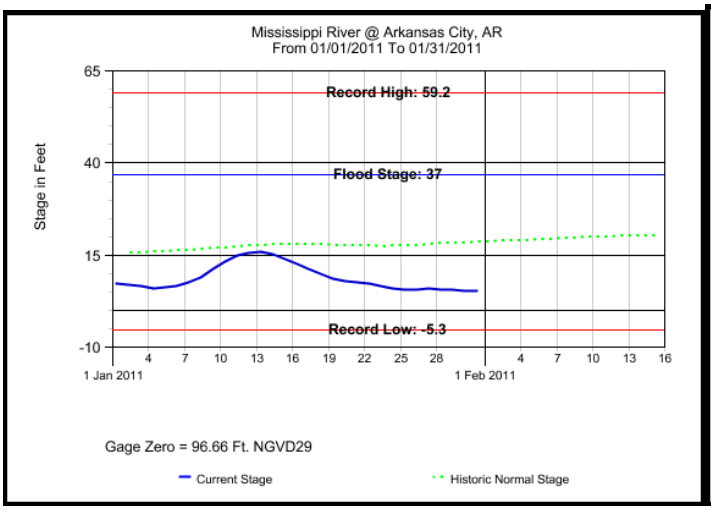
City (Airport)	January Rainfall	Departure from normal	2011 Rainfall	2011 Departure from Normal
Jackson, MS	4.48	-1.19	4.48	-1.19
Meridian, MS	4.33	-1.59	4.33	-1.59
Greenwood, MS	2.42	-2.83	2.42	-2.83
Greenville, MS	1.74	-3.58	1.74	-3.58
Hattiesburg, MS	3.94	-3.10	3.94	-3.10

Vicksburg, MS	5.00	-1.09	5.00	-1.09

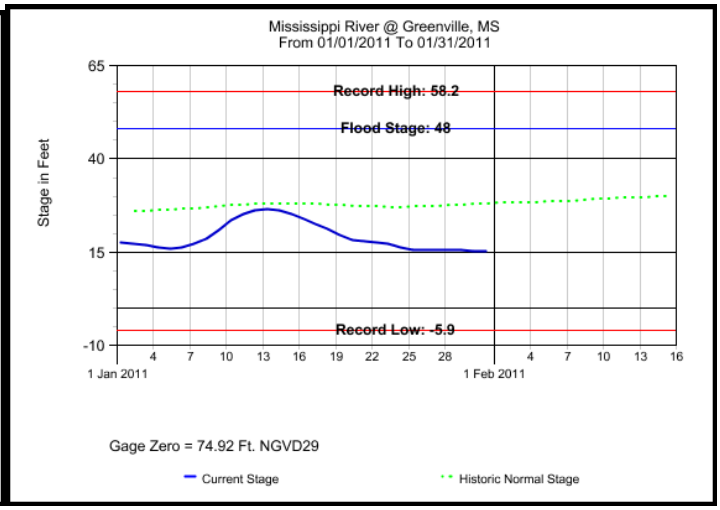
Mississippi River...

Mississippi River Plots for January, 2011

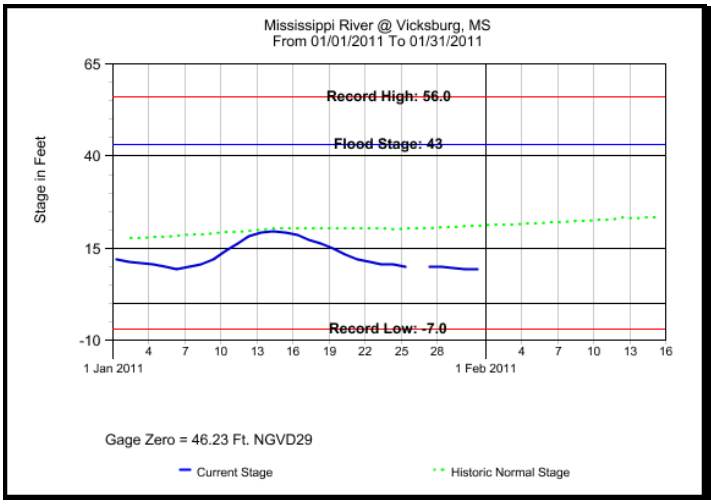
Plots Courtesy of the United States Army Corps of Engineers



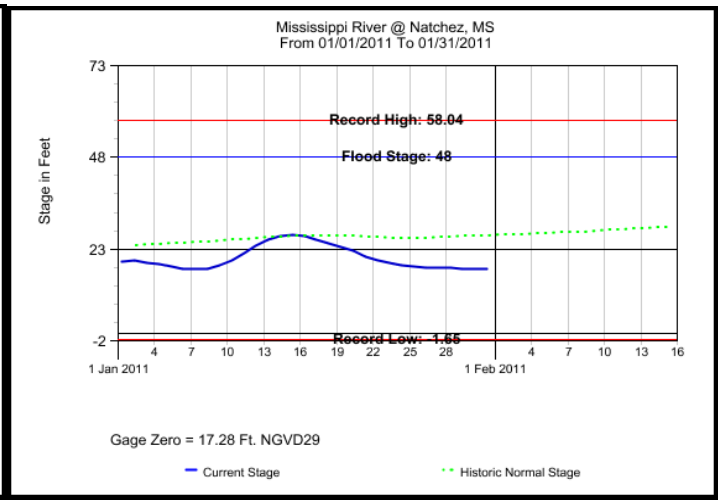
ARKANSAS CITY, MS



GREENVILLE, MS



VICKSBURG, MS



NATCHEZ, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	15.84	01/13/11	5.08	01/31/11
Greenville, MS	48	26.48	01/13/11	15.05	01/31/11
Vicksburg, MS	43	19.79	01/14/11	9.16	01/30/11
Natchez, MS	48	26.85	01/15/11	17.42	01/30/11

Total Flood Warning products issued: 6
Total Flood Statement products issued: 26
Total Flood Advisories MS River : 0
Daily Rainfall Products (RRA'S) issued: 31
Daily River Forecast Products (RVS'S) issued: 31
Daily River Stage products (RVA'S) issued: 31

Marty V. Pope

Service Hydrologist

&

Latrice Maxie

Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District